

in his pocket. How with this <sup>217 p 100 m 36</sup> ~~trial~~ <sup>made</sup> experiment <sup>84</sup>  
came back to that lucky Liverpool Merchant, <sup>84</sup>  
bought-up every bale of the useless stuff: <sup>they</sup>  
no has heard of the incident - out of which  
grew the fortunes of the late Sir Titus Salt.  
This was in 1836: in the same year, three pieces  
were made from the new material; no firm  
after another took it up, & <sup>later</sup> a few years  
<sup>the production of</sup> the Alpaca <sup>became</sup> <sup>the staple</sup> <sup>industry</sup> <sup>of Bradford.</sup> It must not be  
supposed that W. Salt originated alpaca;  
Ripart found the beautiful cloth in  
use amongst the Peruvians - but it was  
he who practically introduced it as a  
British manufacture; & a most interesting  
unique monument of his success remains  
in the perfect little town upon the Aire  
which bears his name.

At Phalanthropic Manufactures, W. Salt resolved  
that his work-people should live & labour under  
the most favorable conditions - in pure  
air & amidst fine scenery. He chose a  
lovely spot in the Aire Valley, backed by  
fine wood <sup>hills,</sup> & opening into the wildest  
plains: on a space enclosed between the  
Midland Railway, the Leeds & Liverpool  
Canal, & the Aire, he built his fine factory,  
& about it, a town. Capable of accommodating  
some 5,000 ~~persons~~ <sup>families</sup> - his work-people & their families  
in excellent houses, well-built, well-drained  
& quite <sup>pleasant</sup> ~~beautiful~~ <sup>pleasant</sup> ~~household~~. This was not all.  
Schools

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Schools were provided, a pretty Chapel, Sunday Schools, Public Baths & Wash-houses, & Parks, an Institute which in its appointment might be a West-End Club; nothing was forgotten even to allotment gardens & judiciously placed rows of pig-styes.

In 1853, all was completed & a unique spectacle the virgin town stood waiting to be occupied, when on his fiftieth birthday Mr. Salt led his people in to take possession, to the sound of "Jackboot & Gallantry"; amidst rejoicing & ~~celebration~~ <sup>working</sup> of the occasion. Saltaire is still a fresh bright little town; even the great Factory is unobscured by smoke; & the two monster-engines bright & beautiful as a drawing-room clock are literally kept in glass cases for the delight of the public; that is to say, a huge sheet of plate glass reveals the whole of each engine.

But Saltaire has been too much written about to need further eulogium; & we only linger in the immense warehouses because nowhere else perhaps could one so well see the great variety of wools used in the Worsted Manufacture, each sort having its specialty. Such fits it for the production of this is the Merino fabric. Here are coarse, odd-looking, long bales from India, packed in the well-known Indian matting; neat little square ballots from Rouen, with many like bales from Saxony, oriental looking bundles of silk from China; and packages of Egyptian mohair. & much merino wool as well as mohair from the Cape; Botany wool in endless quantities; wools from Australia, wools from Egypt.

But where are the home-grown wools? we are  
 anxious to compare their qualities with those  
 of the foreign fleeces whose merits had been  
 pointed out: alas, conspicuous by their  
 absence are the once famous long-staple  
 wools of Britain! a fact to be attributed  
 solely to the late fashion in women's  
 dress - the use of soft, dull fabrics in the  
 production of which the bright English wools  
 cannot be employed. Pure alpaca-  
 stuffs are still largely made for coatings &  
 other purposes not affected by this fashion.  
 & heaps of 'queer-looking stuff', brown, black,  
 or 'whitely brown' - beautifully fine & glossy  
 wools by the way - lay about in heaps  
 ready for the sorter.

But this most-curious & interesting display  
 of foreign wools must not tempt us to  
 linger: we have yet to see

Something



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But enough of a question which, after all, will  
pretty generally turn upon - how the individual  
defines for himself the liberty of the subject  
in a free state; whether it be liberty to each to  
do as he likes without fear or favour, or whether  
a certain noblest obligation attaches to this  
high condition, making it, possibly, in-  
cumbent upon a man to restrain himself  
~~whether~~ where the law would have restrained  
him in other circumstances.  
It is unnecessary to remind the reader  
that throughout its career the Worsted Manufacture  
has been the cherished darling of the State  
whose solicitude has been <sup>usually</sup> ~~even~~ <sup>acknowledged</sup> ~~rewarded~~  
with the most <sup>generous</sup> ~~generous~~ returns.

~~We wish to know~~ <sup>see</sup> something of the processes  
of the Manufacture, so bestate ourselves in  
the important <sup>within the Borough.</sup> ~~which~~ the courtesy of  
the owners enables us to inspect.  
A hoist-bear us aloft to the top story, where, as  
in most Mills, the wool-sorting is carried on  
for the benefit of a strong light from the roof.  
We have heard rumours of a mysterious Wool  
Sorter's Disease, expect to find the atmosphere  
laden with evil odours; but there is nothing in  
the large, bright airy room we enter to offend the  
most fastidious; while the wool we see is clean  
pleasant to the touch: the disease would appear  
to be caused by lime used to separate the wool  
from the chire, <sup>through</sup> it ~~it~~ rarely attacks the Sorters,  
in the Worsted Manufacture in which chore ~~Sorters~~  
are usually employed. The Wool Sorter is a  
skilled labourer, a sort of Sheep Doctor in his trade.  
He receives for his wages for light & easy work.  
He stands at a board placed breast high before  
a window, upon which a fleece is spread; with under  
quickness of eye & touch he sorts the hairs into <sup>different</sup> ~~some~~



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X //

of dryer different qualities.

The next process is simple enough; the wool is thrown into a large trough containing soap & hot water, where it is worked about with iron rollers:

when clean, it is drawn out of the water by a "porcupine" - a cylinder set with hooked teeth.

It is dried by being spread over a wire grating beneath which immense fans keep up a current of heated air.



The wool now goes through two or three preliminary processes to prepare it for the Combing machine: First, a ~~machine~~ Cutter & Plucker, set with crooked teeth, removes the knots from the tangled apron of wool with which it is fed. Then, two or three preparing machines successively reduce the apron of wool to a sliver, a loose roll about the thickness of a child's wrist. This sliver passes into the Combing Machine - a marvel of mechanical skill, which performs fully a dozen processes with human ingenuity & infinitely more than human precision. To understand what is required of such a machine it must be borne in mind that the combing of a tuft of wool is unlike the combing of one's own hair in that - that the hair is attached, a fact which gives a certain freedom of action to the comb. Some sort of attachment must be effected for the wool, & in the days of hand-combing the following ready method was adopted.

The comber worked with two heated combs, one fixed to a post, the other <sup>free</sup> ~~to be~~; taking a tuft of soiled wool in his hand, he "lashed" it repeatedly into the fixed "holding" comb; <sup>each</sup> ~~every~~ time the teeth of the comb passed through the fibres, some few tangled ends remained attached. the lashing was continued until all the fibres were caught; then, with the free comb.



comb, the workman dressed the loose ends  
 the left by combing the fibres out repeatedly  
 to their full length: ~~the end being pulled~~  
~~combed~~ the fixed end <sup>then</sup> was removed - torn  
 away - from the holding-comb, leaving behind  
 a mass of refuse - short & broken fibres &  
 impurities. This "noil" was cleared from  
 the comb with a knife, & passed into the receiving  
 can for the use of the clothier, who would work  
 it up into hair, or other coarse wools.  
 Then the ~~same~~ process was repeated, the  
 dressed end being this time "lashed" into  
 the holding comb, & the tangled end, in its  
 turn, combed out. ~~This process was~~  
 then, combed out. ~~the mass~~



Wasteful, tedious, costly, inefficient - as was this method of preparing the wool, it obtained credit within the last thirty years; for, so complex are the operations to be performed, it was believed that no machine could be invented to supersede human labour in this department. In 1792, however, a Frenchman named Jean Heilmann did succeed in bringing out a machine which performed in order the operations of the hand-combers with an infinite saving of time & material. Later, a Combing Machine on the same general principle as this was brought to much perfection by Messrs. Lister & Jonisthorpe; they were judged, however, to have trespassed on Heilmann's patent - a difficulty which W. S. Lister settled by buying this patent for the large sum of £30,000. ~~The date of the~~

The introduction of Lister's Combing Machine marks an epoch in the history of the Woollen Manufacture which from that date received an enormous impulse: the hand-combers lost their occupation 11,000 men being thrown out of work in the Bradford district alone; but distressing as ~~was~~ <sup>is</sup> the tale of their sufferings, it must be ~~remembered~~ <sup>remembered</sup> that their employment was a filthy & unwholesome one, in the suppression of which the community received an ultimate benefit.

Nothing, on the contrary, can be more distinctly neat & cleanly than the operations of a machine almost as complex & complete as the Walter Prees itself.

We see supplying cans containing the roughly prepared rolls of wool, a circular frame, combs <sup>from a fine</sup> <sup>feet</sup> <sup>across</sup>, within it, a deep circular steel <sup>with</sup> <sup>the</sup> <sup>combs</sup>, <sup>curved</sup> <sup>small</sup> <sup>combs</sup> <sup>fixed</sup> <sup>upon</sup> <sup>what</sup> <sup>are</sup> <sup>called</sup> <sup>gill</sup> <sup>bars</sup>, brushes attending upon these, a pair of <sup>upper</sup>



capable of moving within a given arc, a "porter-comb"  
to supplement the nippers, a knife, <sup>two</sup> sets of receiving cans. Any adequate  
description is out of the question, but we  
will attempt to enumerate the steps by  
which the work is performed. Feeding-  
rollers supply the roughly prepared deliver, which  
is carried forward by a series of gill-bars, parts  
of a complex piece of mechanism known as  
a Screw-gill. <sup>The work having</sup> Arrived at the nippers, these  
close upon the end of the deliver, & detach a  
tuft, ~~and~~. While the gill-bars return  
to the feeding-rollers to carry forward another  
end; now each gill-bar is furnished  
with a comb, each comb passes through  
the tail-end of the tuft held by the nippers  
as the bars return to their place; ~~next~~,  
a brush, with steady movement, presses  
the whole of the fibres down between the teeth  
of each comb. Remembering the unthrifty-  
processes of hand-combing, we admire the  
action of these nippers; holding fast  
the undressed end of the tuft, they move  
until they get within the radius of the  
porter-comb; ~~instantly~~, <sup>then</sup> the jaws open, <sup>to</sup> ~~they~~  
deliver ~~the~~ the uncombed end into the teeth  
of this messenger, which carries it forward  
to be operated upon by the teeth of the receiving  
comb. <sup>In this way, the whole of the tuft is</sup> ~~Thus both ends are~~ fully dressed,  
the action of nipper & combs being all the  
while so gentle that there is no needless  
waste of broken fibres, as ~~far~~ <sup>in</sup> the "lashing"  
process, the "roil" is reduced to a minimum.  
this